

Express Mail No.: EV335395372US
International Application No.: PCT/SE03/00525
International Filing Date: 2 April 2003
Preliminary Amendment

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A forming tool for forming sheet blanks in a diaphragm press-(1) of the kind comprising an openable, closed pressure chamber-(4), which is divided in a gas and liquid tight manner by means of a flexible diaphragm-(5), the forming tool-(6) being adapted to be arranged on one side of the diaphragm and a sheet blank-(11) to be formed being adapted to be arranged between the forming tool and the diaphragm, while the opposite side of the diaphragm is adapted to be pressurised pressurized by a fluid being supplied at high pressure to cause the flexible diaphragm to deform and, thus, the sheet blank to be pressed against the forming tool, the forming tool further comprising:

a cutting edge, so that the sheet blank is both formed into the desired shape and cut to the desired size in a single forming step; ~~and, characterised in that the forming tool (6) comprises~~

an elongate cutting and flanging tool-(7) along at least part of its periphery and/or around an intended opening in the sheet blank-(11), the cutting and flanging tool having a cutting edge-(17) and being displaceable, with the aid of actuating means-(18), in an elongate slot in the forming tool towards and away from the diaphragm-(5), in such manner that, at a first pressing pressure, the sheet blank is caused to be cut off against the cutting edge and, as the pressure is continuously increased, the cutting and flanging tool is caused to be displaced into the slot in the forming tool away from the diaphragm, so that the peripheral edge of the sheet blank and/or the circumferential edge around an opening therein is/are deformed towards the interior of the slot during forming of a flanged edge-(22) in the sheet blank.

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2. (Currently Amended) A-The forming tool as claimed in claim 1,
~~characterised in that wherein~~ the actuating means comprises a plurality of hydraulic cylinders-(18) along the longitudinal extent of the cutting and flanging tool-(7).

3. (Currently Amended) A-The forming tool as claimed in claim 1 or 2, ~~characterised in that wherein~~ the cutting edge-(17) of the cutting and flanging tool-(7) is formed by a recess-(15) along a longitudinal edge of the cutting and flanging tool that is oriented towards a forming surface-(16) of the forming tool-(6), the width of the recess corresponding to the width of the flanged edge-(22) to be formed.

4. (Currently Amended) A-The forming tool as claimed in claim 3, ~~characterised in that wherein~~ the recess-(15) of the cutting and flanging tool-(7) has a varying width along its longitudinal extent so as to form a flanged edge-(22) of varying width.

5. (Currently Amended) A-The forming tool as claimed in ~~any one of the preceding claims claim 1, characterised in that wherein~~, in an initial, projecting position, an outermost surface of the cutting and flanging tool-(7) is flush with a forming surface-(16) of the forming tool-(6).

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6. (Currently Amended) A diaphragm press comprising an openable, closed pressure chamber, which is divided in a gas and liquid tight manner by means of a flexible diaphragm, and a forming tool (6) as claimed in any one of the preceding claims, wherein the forming tool is adapted to be arranged on one side of the diaphragm and a sheet blank to be formed being adapted to be arranged between the forming tool and the diaphragm, while the opposite side of the diaphragm is adapted to be pressurized by a fluid being supplied at high pressure to cause the flexible diaphragm to deform and, thus, the sheet blank to be pressed against the forming tool, the forming tool comprising:

a cutting edge, so that the sheet blank is both formed into the desired shape and cut to the desired size in a single forming step; and

an elongate cutting and flanging tool along at least part of its periphery and/or around an intended opening in the sheet blank, the cutting and flanging tool having a cutting edge and being displaceable, with the aid of actuating means, in an elongate slot in the forming tool towards and away from the diaphragm, in such manner that, at a first pressing pressure, the sheet blank is caused to be cut off against the cutting edge and, as the pressure is continuously increased, the cutting and flanging tool is caused to be displaced into the slot in the forming tool away from the diaphragm, so that the peripheral edge of the sheet blank and/or the circumferential edge around an opening therein is/are deformed towards the interior of the slot during forming of a flanged edge in the sheet blank.